



**Revision list**

**What's new netJACK  
Communication Solutions DVD  
2017-03-1**

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# 1 Introduction

## 1.1 About this document

This manual informs about major changes regarding the new release of the **Communication Solutions DVD** for netJACK products:

- hardware,
- firmware,
- configuration software and tools,
- driver, and
- documents.

## 1.2 List of revisions

Rev	Date	Name	Revision
4	2017-04-04	HH	What's new netJACK – Communication Solutions DVD 2017-03-1

*Table 1: List of revisions*

## 2 What's new netJACK - Communication Solutions DVD

This chapter describes the major changes from **Communication Solution DVD 2015-07-1** to **Communication Solution DVD 2017-03-1**.

### 2.1 Hardware and protocols

#### NJ 50D-RE

NJ 50D-RE is removed and is replaced by NJ 51D-RE.

#### NJ 51D-RE

POWERLINK Controll Node for NJ 51D-RE is added.

### 2.2 Firmware

The following list compares the netJACK firmware versions on the Communication Solutions DVD.

Protocol	File name	Version 2015-07-1	Version 2017-03-1
CANopen Master	J0204000.nxf (NJ 100XX-CO)	2.11.3.0	2.14.0.1
CANopen Slave	J0205000.nxf (NJ 100XX-CO)	3.6.4.0	3.7.0.0
	J0505000.nxf (NJ 10XX-COS)	3.6.4.1	3.7.0.0
CC-Link Slave	J0509000.nxf (NJ 10XX-CCS)	2.11.2.0	2.11.2.4
DeviceNet Master	J0206000.nxf (NJ 100XX-DN)	2.3.17.0	2.4.0.0
DeviceNet Slave	J0207000.nxf (NJ 100XX-DN)	2.3.23.0	2.5.0.2
	J0507000.nxf (NJ 10XX-DNS)	2.3.23.0	2.5.0.2
EtherCAT Master	J020E000.nxf (NJ 100XX-RE)	-	4.4.0.0
	J020E000.nxf (NJ 100XX-RE)	3.0.9.0	3.0.10.0
	Located in the folder Firmware\NETJACK\ Outdated versions\ECM V3		
EtherCAT Slave	J020F000.nxf (NJ 100XX-RE)	4.2.12.0	4.6.0.1
	J060F000.nxf (NJ 51X-RE)	4.2.12.0	4.6.0.1
	J020F000.nxf (NJ 100XX-RE)	2.5.34.0	2.5.42.0
	Located in the folder Firmware\NETJACK\ Outdated versions\ECS V2		
EtherNet/IP Scanner	J020G000.nxf (NJ 100XX-RE)	2.6.7.1	2.9.0.2
EtherNet/IP Adapter	J020H000.nxf (NJ 100XX-RE)	2.7.13.0	2.11.0.6
	J060H000.nxf (NJ 51X-RE)	2.7.20.0	2.11.0.6

Protocol	File name	Version 2015-07-1	Version 2017-03-1
Open Modbus/TCP	J020L000.nxf (NJ 100XX-RE)	2.5.11.0	2.6.0.2
	J060L000.nxf (NJ 51X-RE)	2.5.13.0	2.6.0.2
POWERLINK Controlled Node	J020K000.nxf (NJ 100XX-RE)	2.1.39.0	2.1.53.0
	J060K000.nxf (NJ 51X-RE)	2.1.39.0	-
		-	3.2.0.1
PROFIBUS DP Master	J0201000.nxf (NJ 100XX-DP)	2.6.13.0	2.7.0.0
PROFIBUS DP Slave	J0202000.nxf (NJ 100XX-DP)	2.7.2.0	2.9.0.1
	J0502000.nxf (NJ 10XX-DPS)	2.7.7.0	2.9.0.1
PROFINET IO Controller	J020C000.nxf (NJ 100XX-RE)	-	3.2.0.0
	J020C000.nxf (NJ 100XX-RE)	2.6.10.0	2.7.0.7
	Located in the folder Firmware\NETJACK\ Outdated versions\PNM V2		
PROFINET IO Device	J020D000.nxf (NJ 100XX-RE)	3.5.43.0	3.10.0.9
	J060D000.nxf (NJ 51X-RE)	3.5.43.0	3.10.0.9
	J020D000.nxf (NJ 100XX-RE)	3.4.44.0	3.4.47.0
	Located in the folder Firmware\NETJACK\ Outdated versions\PNS V3.4		
Sercos Master	J020I000.nxf (NJ 100XX-RE)	2.1.5.0	2.1.9.0
Sercos Slave	J020J000.nxf (NJ 100XX-RE)	3.1.19.0	3.4.0.0
	J060J000.nxf (NJ 51X-RE)	3.1.20.0	3.4.0.0

Table 2: netJACK firmware versions

The Changelog for each Firmware is on the DVD in the directory:

DVD:\Firmware\Changelog

## 2.2.1 EtherCAT Master V4.4

The new EtherCAT Master version 4.4 is introduced. EtherCAT Master version 3.0 is still available.

Performance improvement and new functions with EtherCAT Master firmware V4:

- General performance improvement up to five times
- Improvements in network and individual Slave control, Slave diagnostics
- Support of CoE, SoE, EoE, FoE, ExtSync
- Support of redundancy in different, even complex topologies, including DC and DC resynchronization and hot-connect
- Minimum cycle time 250 µs

## 2.2.2 EtherNet/IP Adapter V2.11

New: Time Sync Object (0x43) added which is a prerequisite that the application can use CIP\_SYNC for clock synchronization.

## 2.2.3 Open Modbus/TCP V2.6

New: FC 43 is supported.

New: Configuration API for client functionality (Command table). The application can configure up to 16 server devices and up to 256 commands.

## 2.2.4 PROFINET IO-Controller V3.2

The new PROFINET IO Controller version 3.2 is introduced. PROFINET IO Controller version 2.7 is still available.

The PROFINET IO-Controller V3 offers several new features, which are not available in the PROFINET IO-Controller V2:

- IRT operating mode
- Optimized process data performance
- Automatic name assignment
- Automatic alarm acknowledgement
- MRP Client and Manager for media redundancy (MRP Manager requires a license)
- Requirements PROFINET Specification 2.3: e. g. Advanced Startup, MultipleInterfaceMode, network load requirements.

The process data handling in PROFINET IO-Controller V3 (process data image structure and process data timing) was reworked to achieve the required performance improvement and to support synchronized applications.

Removed features and incompatibilities:

- PROFINET IO-Controller V3 does neither support swapping of IO data nor automatic IOPS handling.
- The configuration parameters have been extended to meet the IRT configuration requirements. The structure of the configuration database has been changed. Therefore, the PROFINET IO-Controller V3 can not be configured with a configuration database of the PROFINET IO-Controller V2 and vice versa.
- The configuration API of PROFINET IO-Controller V2 are not supported by PROFINET IO-Controller V3. The new configuration API of PROFINET IO-Controller V3 is to be used.
- The PROFINET IO-Controller V3 does not support process data in little endian format. This feature was rarely used and has been removed for better performance.

For migration, a "Migration Guide PROFINET IO Controller Migrating from version 2 to 3" is available.

PROFINET IO-Controller firmware version 3 requires SYCON.net version 1.400 or higher. SYCON.net V1.400 (or higher) includes the PROFINET IO IRT DTM and the Topology Editor.

## 2.2.5 PROFINET IO-Device V3.10

Compared to version 3.5, PROFINET IO-Device version V3.10 offers the following improvements:

- netX 51/100-based devices support to 8 IO-ARs (up to 2 IO-ARs before, netX 50-based devices still support up to 2 IO-ARs)
- New: I&M5 supported
- netX 51-based devices support 250 µs minimum cycle time for RT\_CLASS\_3 (500 µs before)
- Read/write record with up to 8 KB, fragmented (1 KB before)
- Advanced Startup according to PROFINET specification 2.3 supported

## 2.2.6 POWERLINK Controlled Node V3.2

The new POWERLINK Controlled Node version 3.2 is introduced (for netX 51-based products).

POWERLINK Controlled Node version 3 (compared to V2) offers the following improvements:

- Performance improvements
- IPV4 support according to EPSG specification
- Multiple ASnd

## 2.2.7 Sercos Slave V3.4

New: Hot plug is supported.

New: Cross communication is supported.

netX 51-based devices offer more I/O data:

- Up to 284 bytes of cyclic produced data (including Connection Control and IO Status)
- Up to 276 bytes of cyclic consumed data (including Connection Control and IO Control)

## 2.3 Driver and toolkit

### **cifX Device Driver**

Windows® 10 support added.

NDIS 6 version of cifXNDIS to support Windows® 10.

For detailed changes, see \Driver and Toolkit\Device Driver (NXDRV-WIN)\driver\_history.txt.

### **Toolkit**

Updated version.

For detailed changes, see \Driver and Toolkit\Driver Toolkit (NXDRV-TKIT)\cifXToolkit\version\_history.txt.

## 2.4 Configuration software and tools

### **SYCON.net**

SYCON.net was updated from V1.360.140808.12914 to V1.400.170125.19044.

Windows® 10 is supported.

PROFINET IO IRT Controller DTM and Topology Editor added to configure the PROFINET IO Controller for IRT communication.

### **netX Configuration Tool**

Windows® 10 is supported.

## 2.5 Documentation

### **User manual netJACK**

The user manual netJACK updated to revision 5. The main changes are

- PROFINET IO Controller V3 added.
- EtherCAT Master V4 added.
- LED descriptions added respectively revised.
- Technical data added respectively updated.
- NJ 50D-RE removed and replaced by NJ 51D-RE.

### **User Manual Software Installation**

User Manual "Software Installation comX and netJACK" updated and Windows® 10 support added.

### **Operating instructions**

All operating instructions manuals for SYCON.net updated to Windows® 10.

### **Protocol API**

CANopen Master Protocol API updated.

CANopen Slave Protocol API updated.

CC-Link Slave Protocol API updated.

DeviceNet Master Protocol API updated.

DeviceNet Slave Protocol API updated.

EtherCAT Master V4 Protocol API added.

EtherCAT Slave Protocol API updated.

EtherNet/IP Scanner Protocol API updated.

EtherNet/IP Adapter Protocol API updated.

Open Modbus/TCP Protocol API updated.

POWERLINK Controlled Node V3 Protocol API added.

PROFINET IO Controller V3 Protocol API added.

PROFINET IO Device Protocol API updated.

Sercos Slave Protocol API updated.

### **Application note**

Application note: EtherNet/IP Adapter CIP Sync added.

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